AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings of claims in the application:

LISTING OF CLAIMS:

1-31. (cancelled)

32. (new) A method for in vitro diagnosis of pathologies linked to over-expression of GLUT1 on cell surfaces, said method comprising:

- contacting a biological sample from an individual with a GLUT1 binding polypeptide, said GLUT1 binding polypeptide being optionally labeled, or susceptible to be recognized by a labeled molecule, wherein said GLUT1 binding polypeptide comprises an envelope protein of a primate T-cell leukemia virus (PTLV), or a fragment thereof, that specifically binds to the ubiquitous vertebrate glucose transporter GLUTI represented by SEQ ID NO: 2; and

- determining the level of said GLUTI binding polypeptide bound to cells contained in the biological sample and comparing with the level of binding of said GLUT1 binding polypeptide to cells contained in a biological sample from a healthy individual,

wherein an elevated level of binding indicates a pathology linked to over expression of GLUT1.

33. (new) The method of claim 32, wherein the GLUT1 binding polypeptide is able to bind to at least one of the following fragments of GLUT1 selected from the group consisting of:

SEQ ID NO: 25: NAPQKVIEEFY;

SEQ ID NO: 26: NQTWVHRYGESILPTTLTTLWS;

SEQ ID NO: 27: KSFEMLILGR;

SEQ ID NO: 28: DSIMGNKDL;

SEQ ID NO: 29: YSTSIFEKAGVQQP;

SEQ ID NO: 30: EQLPWMSYLS;

SEQ ID NO: 31: QYVEQLC; and

SEQ ID NO: 32: IVGMCFQYVEQLC.

34. (new) The method of claim 33, wherein the GLUT1 binding polypeptide is able to bind to at least the following fragment of GLUT1:

SEQ ID NO: 32: IVGMCFQYVEQLC

35. (new) The method of claim 32, wherein the GLUT1 binding polypeptide is selected from the group consisting of:

- the envelope protein of HTLV-I,
- the envelope protein of HTLV-2,
- the envelope protein of STLV-1,
- the envelope protein of STLV-2, and
- the envelope protein of STLV-3.

36. (new) The method of claim 35, wherein the GLUT1 binding polypeptide is selected from the group consisting of SEQ ID NO: 4, 6, 8, 10, and 12.

37. (new) The method of claim 32, wherein the GLUT1 binding polypeptide is a fragment of a PTLV envelope protein, wherein the fragment has its N- terminal located between positions 1 to 90 and its C-terminal located between positions 135 to 245 of the sequence of said PTLV envelope protein.

38. (new) The method of claim 37, wherein said fragment has its N- terminal located between positions 75 to 90 and its C-terminal located between positions 135 to 150 of the sequence of said PTLV envelope protein.

39. (new) The method of claim 37, wherein the PTLV envelope protein sequence is selected from the group consisting of SEQ ID NO: 4, 6, 8, 10, and 12.

40. (new) The method of claim 37, wherein the PTLV envelope protein sequence is the HTLV-1 MT-2 strain sequence

SEQ ID NO:4, and the fragment has its N-terminal located between positions 83 to 89, and its C-terminal located between positions 139 to 145.

41. (new) The method of claim 37, wherein the PTLV envelope protein sequence is the HTLV-2 sequence SEQ ID NO:6, and the fragment has its N-terminal located between positions 79 to 85, and its C-terminal located between positions 135 to 141.

42. (new) The method of claim 37, wherein the PTLV envelope protein sequence is the STLV-1 sequence SEQ ID NO:8, and the fragment has its N-terminal located between positions 83 to 89, and its C-terminal located between positions 139 to 145.

43. (new) The method of claim 37, wherein the PTLV envelope protein sequence is the STLV-2 sequence SEQ ID NO:10, and the fragment has its N-terminal located between positions 79 to 85, and its C-terminal located between positions 135 to 141.

44. (new) The method of claim 37, wherein the PTLV envelope protein sequence is the STLV-2 sequence SEQ ID NO:12, and the fragment has its N-terminal located between positions 82 to 88, and its C-terminal located between positions 138 to 144.

45. (new) A method for in vitro diagnosis of pathologies linked to over-expression of GLUT1 on cell surfaces, said method comprising:

- contacting a biological sample from an individual with a GLUT1 binding polypeptide selected from the group consisting of SEQ ID NO: 14, 16, 18, 20, 22, and 24, said GLUT1 binding polypeptide being optionally labeled, or susceptible to be recognized by a labeled molecule, and

- determining the level of said GLUT1 binding polypeptide bound to cells contained in the biological sample and comparing with the level of binding of said GLUT1 binding polypeptide to cells contained in a biological sample from a healthy individual,

wherein an elevated level of binding indicates a pathology linked to over expression of GLUT1.